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Invention Title: Multi-Axes Tool Compensation – 3D and 5-axis real-time interactive tool compensation inside the CNC machine tool controller.

Inventor: Gary John Corey

Application No. 10/079,309

Inventor's Phone No.: (909) 674-8100



1/9

CNC Machine Tool Parameters Ver 12

Tool Parameters								Tool Definitions (Solid Mode Only)				
Size	Horz	Vert	Height	Wear	Custom1	Custom2		Corner radius	Bottom angle	Side angle	Length	Type
1	0.25	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	3.0	0
2	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
3	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
4	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
5	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
6	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
7	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
8	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
9	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0
10	0.0	0.0	0.0	0.0	0.0	0	0	0.0	0.0	0.0	0.0	0

Machine Offsets							
X	Y	Z	4	5	6	7	8
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Fixture Offsets						
	G54	G55	G56	G57	G58	G59
X	0.0	0.0	0.0	0.0	0.0	0.0
Y	0.0	0.0	0.0	0.0	0.0	0.0
Z	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0

Optional Settings

☐ Dry Run (Disable Z Spindle Feed Mode)

☐ Bitmap G code Display (Speed Penalty)

☒ Graphics: Solids vs Wire Frame

0.001 Tolerance (math and positioning)

/ Block Skip Character

TeachX Teach File Name (No Paths)

Farnc Arc Centers: ☒ Absolute (0) ☐ Incremental (1) ☐ R for Radius (2)

Solid Stock: Begin Z @ 0.0, Extra Stock 1.0

F4 key F3 key F2 key F1 key

F5 Tool Definitions F6 Tool Life F7 Tool Photos F8 Convert to Metric F9 Convert to Inch

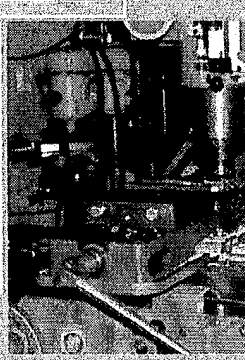


FIG 1.

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2/9

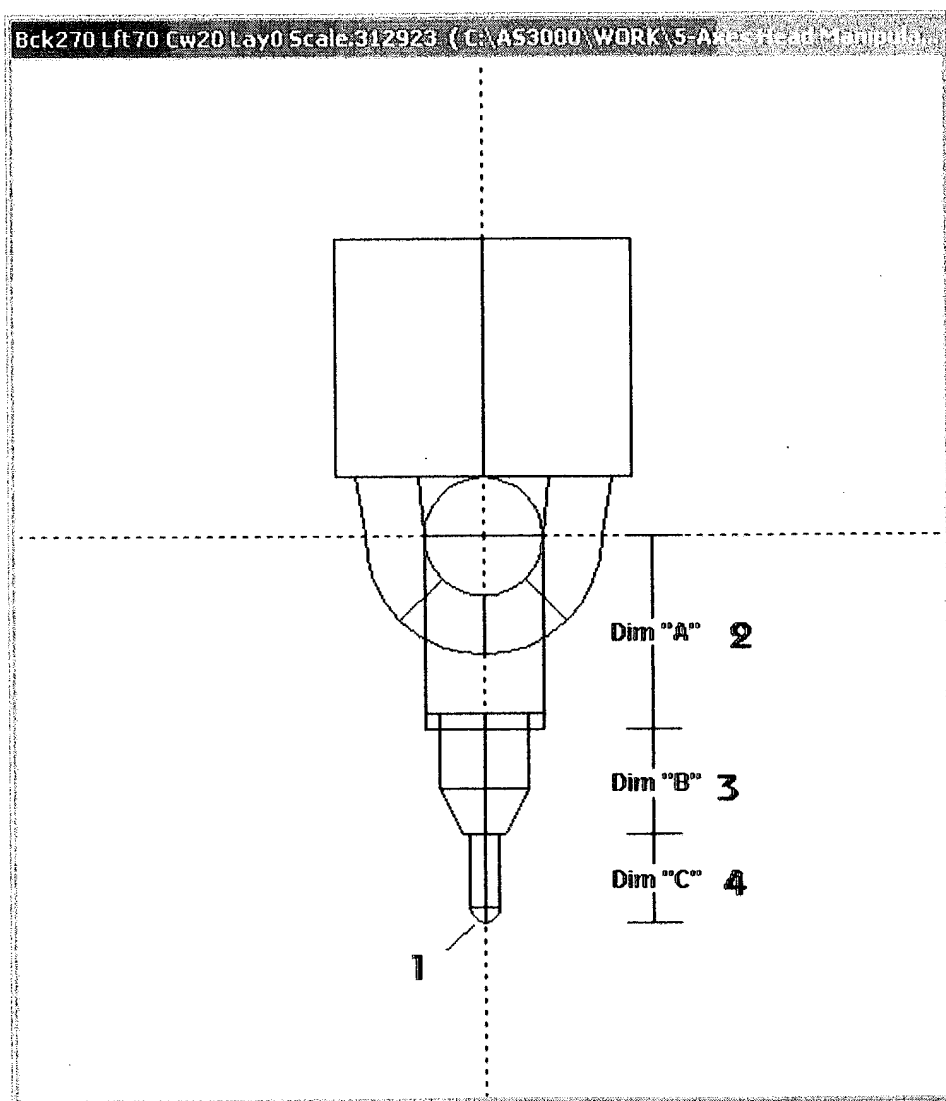


FIG 2.



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3/9

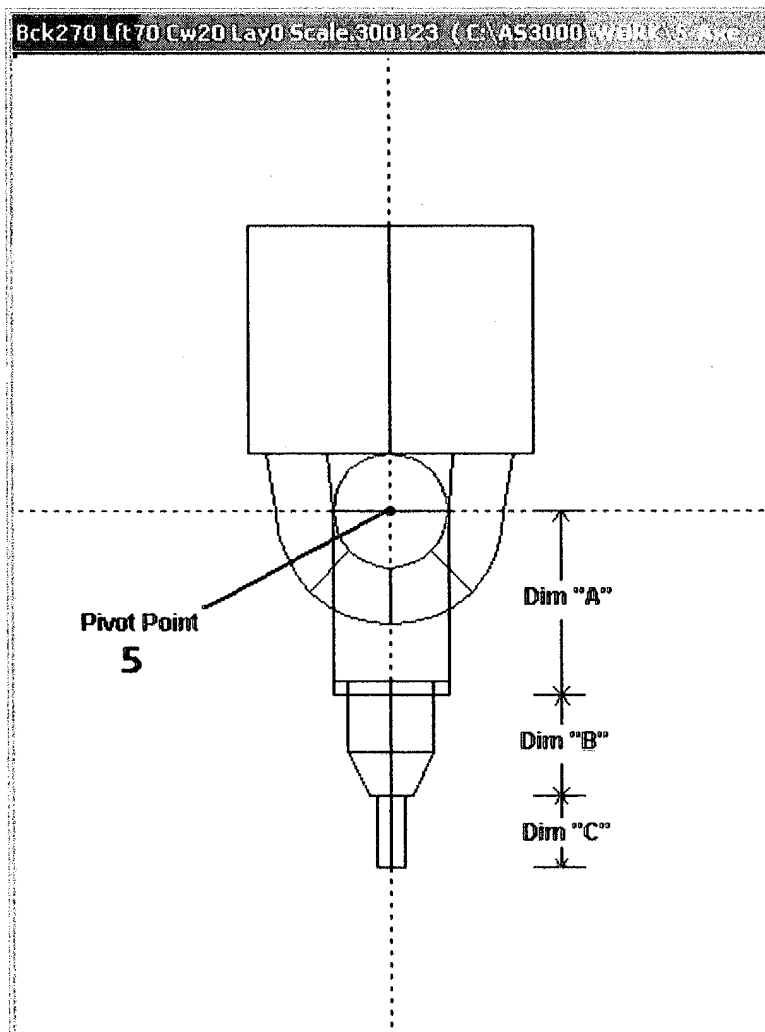


FIG 3.

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4/9

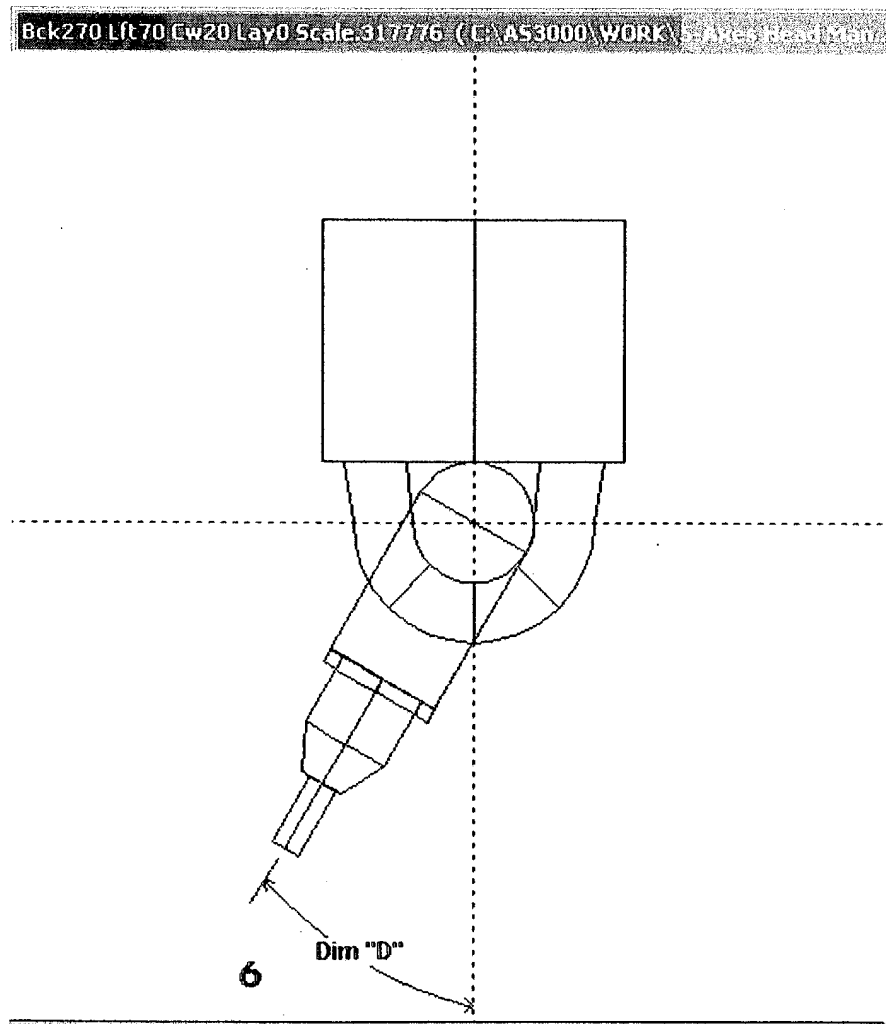


FIG 4.



Invention Title: Multi-Axes Tool Compensation – 3D and 5-axis real-time interactive tool compensation inside the CNC machine tool controller.

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5/9

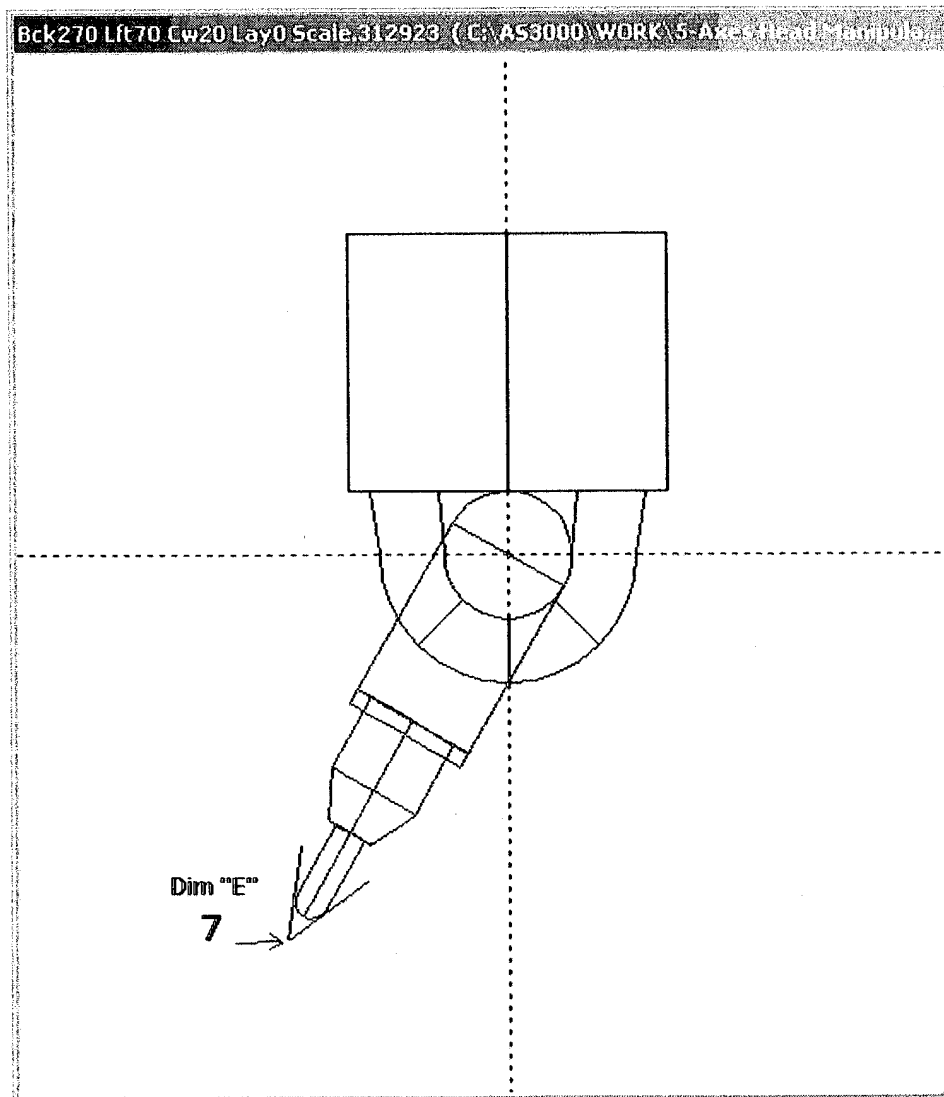


FIG 5.



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6/9

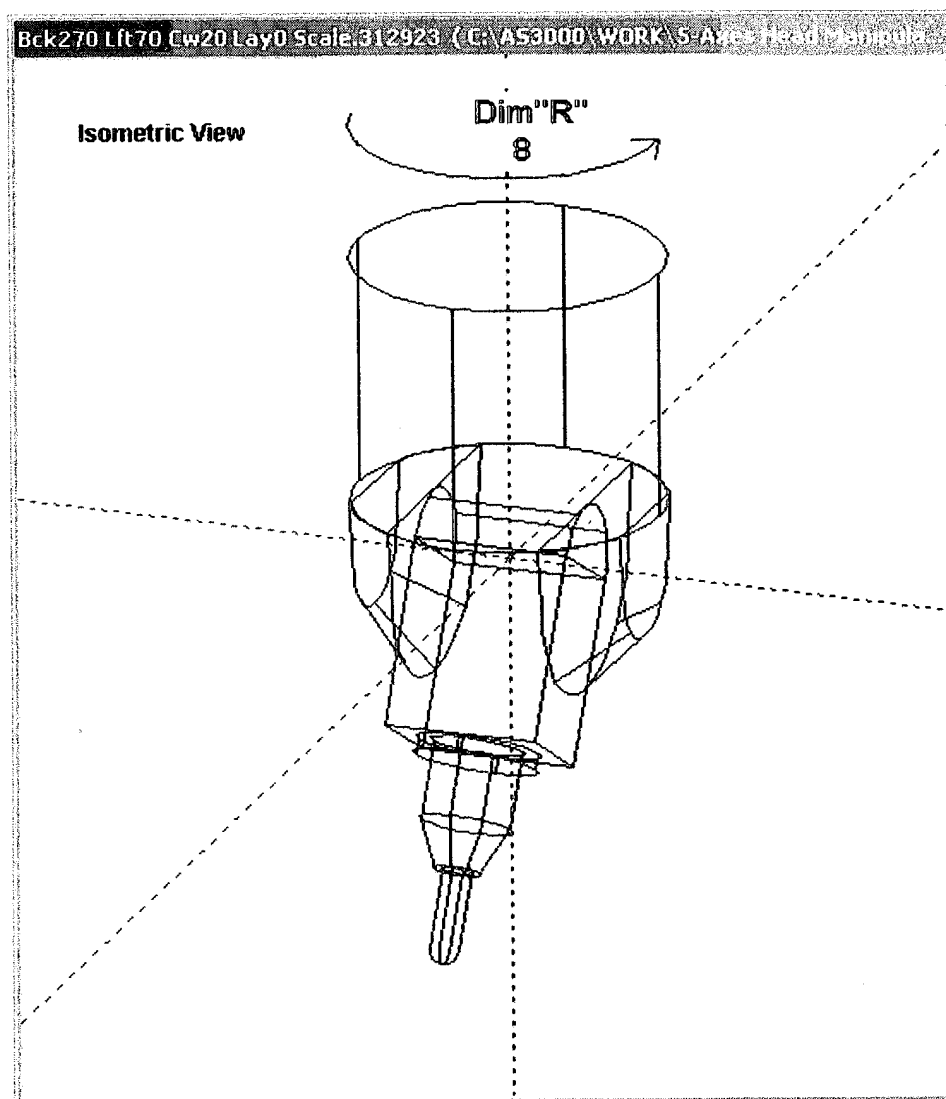
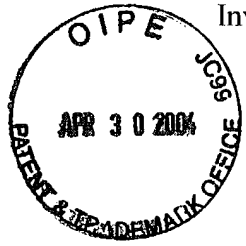


FIG 6.



Invention Title: Multi-Axes Tool Compensation – 3D and 5-axis real-time interactive tool compensation inside the CNC machine tool controller.

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7/9

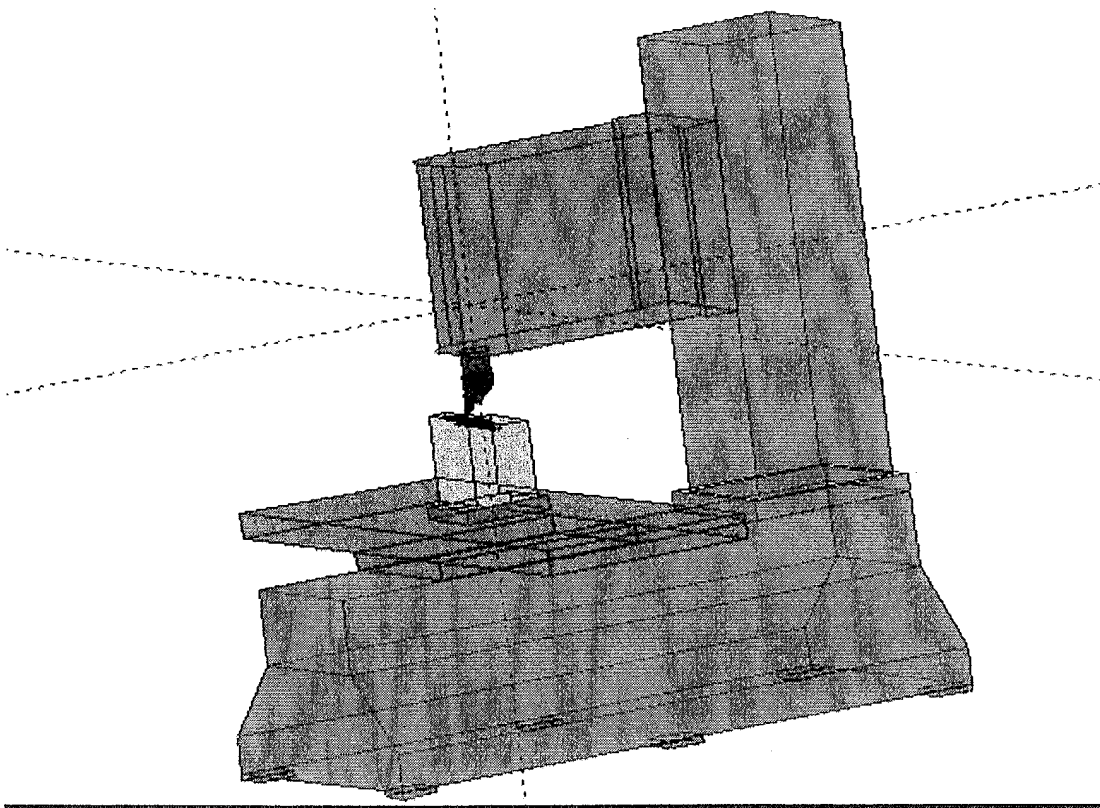


FIG 7.

Invention Title: Multi-Axes Tool Compensation – 3D and 5-axis real-time interactive tool compensation inside the CNC machine tool controller.

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8/9

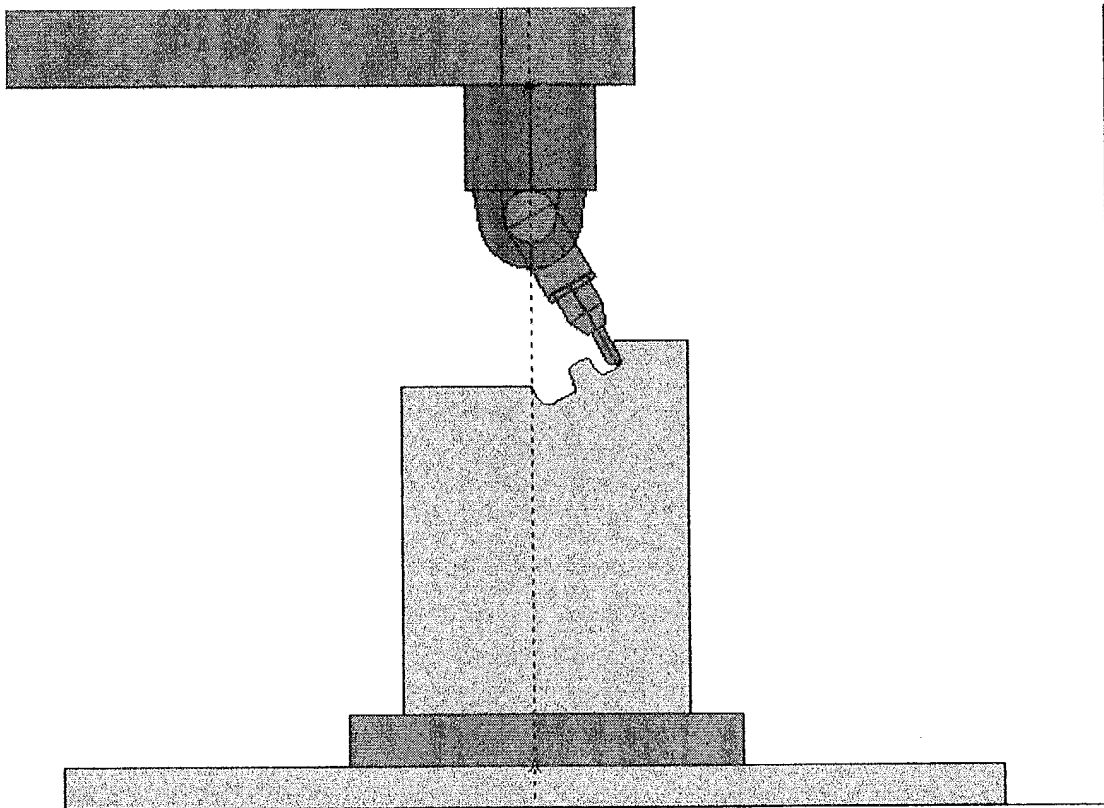


FIG 8.

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9/9

%

N10 T01 M6
N20 G90 S200 M3
N30 G0 A270. B0
N40 X0 Y-21. Z0 M8
N50 Z20.5
N60 G1 Y-10.933 Z17.9365 A270. B-30. F10.
N70 Y-3.2465 Z10.75 A270. B-60.
N80 Y0 Z.5 A270. B-90.
N90 Y-3.2465 Z10.75 A90. B-60.
N100 Y-10.933 Z17.9365 A90. B-30.
N110 Y-21. Z20.5 A90. B0
N120 G1 Z0
N130 G0 A0 B0
N140 X0 Y-21. Z0 S200 F10.
N150 G1 Z20.5
N160 G1 Y-10.9332 Z17.9367 A0 B-29.9993 F10.
N170 Y-3.2463 Z10.7498 A0 B-60.0007
N180 Y0 Z.5 A0 B-90.
N190 Y-3.2465 Z10.75 A180. B-60.
N200 Y-10.933 Z17.9365 A180. B-30.
N210 Y-21. Z20.5 A180. B0
N220 Z0
N230 G0 A0 B0
N240 M30

%

FIG 9.